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DATE: Tuesday, March 30, 2004

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		<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L5	L3 and (beverages or food)	10
<input type="checkbox"/>	L4	L3 and (dilution factor)	0
<input type="checkbox"/>	L3	L2 and (cleaning solution)	13
<input type="checkbox"/>	L2	L1 and (lubricating solution)	38
<input type="checkbox"/>	L1	lubricating and cleaning and conveyor	1176

END OF SEARCH HISTORY

US-PAT-NO: 5873946

DOCUMENT-IDENTIFIER: US 5873946 A

TITLE: Installation and a process for lubricating, cleaning and/or disinfecting conveyor belts

DATE-ISSUED: February 23, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hantmann; Bernhard	Grabenstaett			DE

US-CL-CURRENT: 134/15; 134/88, 134/89, 137/114, 137/3, 137/7, 137/82, 137/84, 137/89, 184/15.1, 422/28

ABSTRACT:

An installation for lubricating, cleaning and/or disinfecting conveyor belts for containers, more particularly for foods, such as bottles, glasses, cans, bags and the like, comprising a central metering station connectable to a water pipe used to dilute a concentrated lubricant, cleaner or disinfectant, and several distributing pipes connected to the metering station lead to the points of use. At each point of use there is a mixing valve (13-19) connectable to distribution line (52) and the water pipe (23) and individually adjustable for each point of use and a pressure reducer (50, 51) fitted upstream of each mixing valve. Varying concentration can be provided for each point of use (31-37) with little technical complexity. In another embodiment, the invention is the process carried out by the installation.

11 Claims, 2 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 2

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KumC	Draw D
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Term	Documents
BEVERAGES	42826
BEVERAGE	73033
FOOD	464879
FOODS	111815
(3 AND (BEVERAGES OR FOOD)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	10
(L3 AND (BEVERAGES OR FOOD)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	10

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Search Results - Record(s) 1 through 10 of 10 returned.

☐ 1. Document ID: US 20040058829 A1

Using default format because multiple data bases are involved.

L5: Entry 1 of 10

File: PGPB

Mar 25, 2004

PGPUB-DOCUMENT-NUMBER: 20040058829

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040058829 A1

TITLE: Conveyor lubricant, passivation of a thermoplastic container to stress cracking and thermoplastic stress crack inhibitor

PUBLICATION-DATE: March 25, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hei, Kimberly L. Person	Baldwin	WI	US	
Herdt, Joy G.	Hastings	MN	US	
Li, Minyu	Oakdale	MN	US	
Lokkesmoe, Keith Darrell	Savage	MN	US	
Wei, Guang-Jong Jason	Mendota Heights	MN	US	
Besse, Michael E.	Golden Valley	MN	US	

US-CL-CURRENT: 508/208; 508/110, 508/209, 508/214, 508/433, 508/485, 508/545, 508/579, 508/583

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Drawings
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☐ 2. Document ID: US 20030207040 A1

L5: Entry 2 of 10

File: PGPB

Nov 6, 2003

PGPUB-DOCUMENT-NUMBER: 20030207040

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030207040 A1

TITLE: Lubricant qualified for contact with a composition suitable for human consumption including a food, a conveyor lubrication method and an apparatus using droplets or a spray of liquid lubricant

PUBLICATION-DATE: November 6, 2003

h e b b g e e e f e f e e f b e

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Bennett, Scott	Stillwater	MN	US	
Hei, Kim Person	Baldwin	WI	US	
Li, Minyu	Oakdale	MN	US	
Hauptert, Amy	St. Paul	MN	US	
Lokkesmoe, Keith D.	Savage	MN	US	

US-CL-CURRENT: 427/421

ABSTRACT:

The interface between a moving conveyor belt and a work piece can be lubricated using an air driven stream of finely divided droplets of a lubricant composition. Droplets of a preferred size are directed by the air stream onto the conveyor with little waste of lubricant off the conveyor. The lubricant provides a very low coefficient of friction and little or no stress cracking in the containers. Using a low pressure and low flow rate air stream in conjunction with a low flow rate liquid lubricant attains the useful particle size in the lubricant add on spray. The liquid lubricant is sheared by the effect of the air flow creating the desirable droplet size and pattern of lubricant on the conveyor. A food container conveyor device having improved lubricant properties can be lubricated using a lubricant composition that can become ingested by a user from a food or a container for the food, can come into incidental contact or direct contact with a food composition, can be incorporated at measurable concentrations into the food, or can be used generally on food conveyor surfaces wherein the food is exposed to the lubricant.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 3. Document ID: US 20030134752 A1

L5: Entry 3 of 10

File: PGPB

Jul 17, 2003

PGPUB-DOCUMENT-NUMBER: 20030134752

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030134752 A1

TITLE: Container, such as a food or beverage container, lubrication method

PUBLICATION-DATE: July 17, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Li, Minyu	Oakdale	MN	US	
Lokkesmoe, Keight Darrell	Savage	MN	US	
Wei, Guang-Jong Jason	Mendota Heights	MN	US	

US-CL-CURRENT: 508/202; 198/500, 508/486

ABSTRACT:

h e b b g e e e f e f e ef b e

A process for lubricating a container, such as a beverage container, or a conveyor for containers, by applying to the container or conveyor, a thin continuous, substantially non-dripping layer of a liquid lubricant. The process provides many advantages compared to the use of a conventional dilute aqueous lubricant.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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4. Document ID: US 20020051850 A1

L5: Entry 4 of 10

File: PGPB

May 2, 2002

PGPUB-DOCUMENT-NUMBER: 20020051850

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020051850 A1

TITLE: Lubricant qualified for contact with a composition suitable for human consumption including a food, a conveyor lubrication method and an apparatus using droplets or a spray of liquid lubricant

PUBLICATION-DATE: May 2, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Bennett, Scott	Stillwater	MN	US	
Hei, Kim Person	Baldwin	WI	US	
Li, Minyu	Oakdale	MN	US	
Hauptert, Amy	St. Paul	MN	US	
Lokkesmoe, Keith D.	Savage	MN	US	

US-CL-CURRENT: 427/421; 118/300

ABSTRACT:

The interface between a moving conveyor belt and a work piece can be lubricated using an air driven stream of finely divided droplets of a lubricant composition. Droplets of a preferred size are directed by the air stream onto the conveyor with little waste of lubricant off the conveyor. The lubricant provides a very low coefficient of friction and little or no stress cracking in the containers. Using a low pressure and low flow rate air stream in conjunction with a low flow rate liquid lubricant attains the useful particle size in the lubricant add on spray. The liquid lubricant is sheared by the effect of the air flow creating the desirable droplet size and pattern of lubricant on the conveyor. A food container conveyor device having improved lubricant properties can be lubricated using a lubricant composition that can become ingested by a user from a food or a container for the food, can come into incidental contact or direct content with a food composition, can be incorporated at measurable concentrations into the food, or can be used generally on food conveyor surfaces wherein the food is exposed to the lubricant.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 5. Document ID: US 20020025912 A1

L5: Entry 5 of 10

File: PGPB

Feb 28, 2002

PGPUB-DOCUMENT-NUMBER: 20020025912

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020025912 A1

TITLE: Conveyor lubricant, passivation of a thermoplastic container to stress cracking and thermoplastic stress crack inhibitor

PUBLICATION-DATE: February 28, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Person Hei, Kimberly L.	Baldwin	WI	US	
Herdt, Joy G.	Hastings	MN	US	
Li, Minyu	Oakdale	MN	US	
Lokkesmoe, Keith Darrell	Savage	MN	US	
Wei, Guang-Jong Jason	Mendota Heights	MN	US	
Besse, Michael E.	Golden Valley	MN	US	

US-CL-CURRENT: 508/208; 508/209, 508/214, 508/215, 508/433, 508/485, 508/545, 508/579, 508/583

ABSTRACT:

Thermally formed thermoplastic articles can be protected from stress cracking in the presence of stress cracking promoting compounds by forming a shaped article comprising a thermoplastic and a liquid hydrocarbon oil composition. We have found that the liquid hydrocarbon oil composition prevents the stress cracking promoting materials from interacting with the polymeric structure of the stressed container to prevent or inhibit stress cracking in such materials. The methods and compositions of the invention are particularly useful in preventing stress cracking in polyethylene terephthalate beverage containers during bottling operations during which the bottle is contacted with aqueous and non-aqueous materials such as cleaners and lubricants that can interact with the polyester to cause stress cracking particularly in the container base. A process for lubricating a container, such as a beverage container, or a conveyor for containers, by applying to the container or conveyor, a thin continuous, substantially non-dripping layer of a liquid lubricant. The process provides many advantages compared to the use of a conventional dilute aqueous lubricant.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 6. Document ID: US 6673753 B2

L5: Entry 6 of 10

File: USPT

Jan 6, 2004

US-PAT-NO: 6673753

DOCUMENT-IDENTIFIER: US 6673753 B2

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TITLE: Conveyor lubricant, passivation of a thermoplastic container to stress cracking and thermoplastic stress crack inhibitor

DATE-ISSUED: January 6, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Person Hei; Kimberly L.	Baldwin	WI		
Herdt; Joy G.	Hastings	MN		
Li; Minyu	Oakdale	MN		
Lokkesmoe; Keith Darrell	Savage	MN		
Wei; Guang-Jong Jason	Mendota Heights	MN		
Besse; Michael E.	Golden Valley	MN		

US-CL-CURRENT: 508/208; 215/12.2, 428/35.7, 508/209, 508/215, 508/579, 508/583

ABSTRACT:

Thermally formed thermoplastic articles can be protected from stress cracking in the presence of stress cracking promoting compounds by forming a shaped article comprising a thermoplastic and a liquid hydrocarbon oil composition. We have found that the liquid hydrocarbon oil composition prevents the stress cracking promoting materials from interacting with the polymeric structure of the stressed container to prevent or inhibit stress cracking in such materials. The methods and compositions of the invention are particularly useful in preventing stress cracking in polyethylene terephthalate beverage containers during bottling operations during which the bottle is contacted with aqueous and non-aqueous materials such as cleaners and lubricants that can interact with the polyester to cause stress cracking particularly in the container base. A process for lubricating a container, such as a beverage container, or a conveyor for containers, by applying to the container or conveyor, a thin continuous, substantially non-dripping layer of a liquid lubricant. The process provides many advantages compared to the use of a conventional dilute aqueous lubricant.

100 Claims, 5 Drawing figures
Exemplary Claim Number: 1,83
Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	INDEX	Draw D
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7. Document ID: US 6576298 B2

L5: Entry 7 of 10

File: USPT

Jun 10, 2003

US-PAT-NO: 6576298

DOCUMENT-IDENTIFIER: US 6576298 B2

TITLE: Lubricant qualified for contact with a composition suitable for human consumption including a food, a conveyor lubrication method and an apparatus using droplets or a spray of liquid lubricant

DATE-ISSUED: June 10, 2003

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INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bennett; Scott	Stillwater	MN		
Hei; Kim Person	Baldwin	WI		
Li; Minyu	Oakdale	MN		
Hauptert; Amy	St. Paul	MN		
Lokkesmoe; Keith D.	Savage	MN		

US-CL-CURRENT: 427/424; 118/13, 118/21, 118/24, 118/300, 118/304, 118/313, 118/324, 118/325, 118/70

ABSTRACT:

The interface between a moving conveyor belt and a work piece can be lubricated using an air driven stream of finely divided droplets of a lubricant composition. Droplets of a preferred size are directed by the air stream onto the conveyor with little waste of lubricant off the conveyor. The lubricant provides a very low coefficient of friction and little or no stress cracking in the containers. Using a low pressure and low flow rate air stream in conjunction with a low flow rate liquid lubricant attains the useful particle size in the lubricant add on spray. The liquid lubricant is sheared by the effect of the air flow creating the desirable droplet size and pattern of lubricant on the conveyor. A food container conveyor device having improved lubricant properties can be lubricated using a lubricant composition that can become ingested by a user from a food or a container for the food, can come into incidental contact or direct contact with a food composition, can be incorporated at measurable concentrations into the food, or can be used generally on food conveyor surfaces wherein the food is exposed to the lubricant.

113 Claims, 7 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMCC	Draw. De
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☐ 8. Document ID: US 6427826 B1

L5: Entry 8 of 10

File: USPT

Aug 6, 2002

US-PAT-NO: 6427826

DOCUMENT-IDENTIFIER: US 6427826 B1

**** See image for Certificate of Correction ****TITLE: Container, such as a food or beverage container, lubrication method

DATE-ISSUED: August 6, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Li; Minyu	Oakdale	MN		
Lokkesmoe; Keight Darrell	Savage	MN		
Wei; Guang-Jong Jason	Mendota Heights	MN		

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US-CL-CURRENT: 198/500; 508/113

ABSTRACT:

A process for lubricating a container, such as a beverage container, or a conveyor for containers, by applying to the container or conveyor, a thin continuous, substantially non-dripping layer of a liquid lubricant. The process provides many advantages compared to the use of a conventional dilute aqueous lubricant.

70 Claims, 1 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw De
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☐ 9. Document ID: US 6288012 B1

L5: Entry 9 of 10

File: USPT

Sep 11, 2001

US-PAT-NO: 6288012

DOCUMENT-IDENTIFIER: US 6288012 B1

TITLE: Container, such as a beverage container, lubricated with a substantially non-aqueous lubricant

DATE-ISSUED: September 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Li; Minyu	Oakdale	MN		
Lokkesmoe; Keith Darrell	Savage	MN		
Wei; Guang-Jong Jason	Mendota Heights	MN		

US-CL-CURRENT: 508/113; 508/126, 508/181, 508/182, 508/183, 508/208, 508/215

ABSTRACT:

A process for lubrication a container, such as a beverage container, by applying to the container, a substantially non-aqueous lubricant. The process provides many advantages as compared to the use of an aqueous lubricant.

39 Claims, 0 Drawing figures

Exemplary Claim Number: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw De
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☐ 10. Document ID: US 5873946 A

L5: Entry 10 of 10

File: USPT

Feb 23, 1999

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